BOOK REVIEWS

General College Geology. *A. J. Eardley.* Harper & Row, New York, 1965. xviii+499 p. $9.25.

This textbook, which is designed for the liberal-arts student, covers the conventional topics in physical geology and the usual sequence in historical geology. The modern look is represented by chapters on astrogeology and the geology of the ocean floor. With refreshing candor, the author admits he has emphasized "those aspects which students like most and remember best," namely earthquakes, volcanoes, and the evolution of reptiles and mammals, including man. The coverage is two-thirds physical geology (324 pages) and one-third historical (170 pages). This is a considerably better balance than is given in most recent books on general geology, which almost invariably present a chapter or two of historical geology as a sort of afterthought.

Though the author claims to have brought the material "strictly up to date," much of the treatment is quite traditional, not to say old-fashioned. Limestone, for example, is considered as a "chemical" sedimentary rock, and limestone reefs as "organic;" aside from a remark about wave breakup of reef material, clastic limestone is not considered. Passing mention is made of geosynclines and orogenies in chapters 6 and 17, but there is no focused discussion of the development of complex mountains from a geosynclinal origin. Precambrian life is disposed of in one-fourth page and four photos of Glaessner's specimens from South Australia.

There are nearly 450 illustrations. Attractive features include five paleotectonic maps of North America, in color; several steoreoscopically paired photos; seven pages of excellent drawings of fossils, by Julian Maack; and well-presented range charts. Many of the excellent pictures come from the Geological Survey of Canada. It may be debatable whether students need 5 different pictures of cross-bedding, 5 of joints, 5 of island volcanoes in eruption, and 8 of cave dripstone. The end-paper photographs are striking but unidentified.

The innate cussedness of the publishing process is illustrated here and there. The names of Hjulstrom, Shrock, Arduino, and Glaessner are misspelled on pages 127, 264, 294, and 316 respectively. Captions are transposed on page 341 and again on page 344, and two fossil names are misspelled. Noun and adjective are incompatible on page 83 (*nueé ardentes*). Unusual powers are ascribed to an 18th-century gentleman on page 287: "Born in 1769, William Smith's father died before he was eight . . . ."

A book of this broad scale has been needed, and Dr. Eardley is to be thanked for giving us *General College Geology.* It represents an enormous amount of labor, well- and truly spent. The book will do admirably until a better one comes along, if indeed this can be expected.

ROBERT L. BATES

The Electrogenetics of Alberto Pirovano. *John L. Spencer.* Hafner Publishing Company, Inc., New York, 1964. xxi+298 p.+114 fig. $15.00.

Other than translation from Italian, Pirovano's 1922 book, "*La Mutazione Elettrica delle Specie Botaniche,*" is reproduced exactly, by reason of its historic value. In it, the word "ionolysis" is coined ". . . to differentiate the molecular breakdown of organized living matter from other forms of ionization effected, by the same means, in inert matter." Pirovano also wrote, ". . . thanks to ionolysis it will be possible to obtain types with given predetermined properties." But somehow his work and book did not strike the spark nor institute the bandwagon then that modern molecular biology, under the same slogan, has managed to do.

Chapters 1 and 2 are a review of previous works and theories in electro-physiological botanical genetics. Chapter 3 contains the concept on which his work was based. In chapter 4, appeal is made to "induced anomalous molecular composition of the genital plasma" to explain the mechanisms of origin of the observed phenotypic alterations. Descriptions of apparatus, including X-ray tubes made by Roentgen himself, constitute chapter 5, and chapters 6, 7, and 8 present the results obtained. This is a fascinating book for those interested in history of biology.

ELTON F. PADDOCK

Atoms and Molecules Simply Explained: An Introduction to Chemical Phenomena and Their Applications. *B. C. Saunders* and *R. E. D. Clark.* Dover Publications, New York, (paperback), 1964. ix+299 p. $1.50.

This Dover paperback is a reprint of the British text by Saunders and Clark, "Order and Chaos in the World of Atoms," first published in 1948. It is an introduction to several topics, mostly in the field of inorganic chemistry, without any effort to be either comprehensive or to synthesize classical concepts into a new order. As is characteristic in many British texts, the approach is historical, starting with the "air, water, fire, and earth" of Empedocles and continuing through the well-known chemists up to about 1945. Even though such an historical outline contrasts favorably with the usually impersonal presentation in many elementary tests, the fact that it stops shortly after 1945 means tnat it is now of little more than purely historical value. Because, according to the author, after the atomic bomb "the results obtained will no longer be freely published," the inference is that there can be no further developments in chemistry suitable for discussion by novices. This book emphasizes the tremendous changes that have occurred in chemical and physical understandings in the past 20 years, but even high school students are well aware of this today.

R. S. PLATT